

Date: Wed, 6 Oct 93 04:30:11 PDT  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #69  
To: Ham-Ant

Ham-Ant Digest                      Wed, 6 Oct 93                      Volume 93 : Issue    69

Today's Topics:

Bilal Isotron Antennas  
Calculations for 2m Quad  
Cushcraft R7: Want Comments (2 msgs)  
G5RV info swr info (2 msgs)  
Kill the Rubber Duck!  
Parallel Dipole  
Problem with Diamond SG7900  
Tuning a multi-element Yagi

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Tue, 5 Oct 1993 20:05:51 GMT  
From: sdd.hp.com!col.hp.com!srngenprp!alanb@decwrl.dec.com  
Subject: Bilal Isotron Antennas  
To: ham-ant@ucsd.edu

Charles R. Hohenstein (Charles.R.Hohenstein.1@nd.edu) wrote:  
: Has anyone on the Net had any experience with Bilal Isotron Antennas? The  
: compactness of the designs appeals to me, especially in the case of those  
: bands for which dipoles would require a lot of space (e.g., 160 and 80  
: meters).

I tried one on 80 meters one field day. I found I got better results  
by simply loading up the coax as a random-length vertical!

AL N1AL

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Date: 5 Oct 1993 10:25 EDT  
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!darwin.sura.net!haven.umd.edu!  
cs.umd.edu!skates.gsfc.nasa.gov!nssdca.gsfc.nasa.gov!stocker@network.ucsd.edu  
Subject: Calculations for 2m Quad  
To: ham-ant@ucsd.edu

I am in the process of building a 3 element quad for 2m. I have run into some questions based on the closet approximation calculation to use for determining the full wavelength for the 2m.

If I use 1005/Mhz for driven, 1030/Mhz for reflector, 975/Mhz for director I get the following sizes (rounded) for a 146 centered quad:

Dir: 80"

Driv: 83"

Ref: 85"

However, if I use 984/Mhz for the driven and then use 1.05% for reflector and 95% for the director, I get the following sizes (rounded) for a 146 center quad:

Dir: 77"

Driv: 81"

Ref: 85"

The reflector size particularly looks strange in the two when compared to the size of the driven element.

Which one is likely to get me the best approximation to the best size for the elements. At these high frequencies, being out by 2" seems kind of large.

Any advice would be appreciated!

Erich

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Date: 4 Oct 93 19:17:46 GMT

From: news-mail-gateway@ucsd.edu  
Subject: Cushcraft R7: Want Comments  
To: ham-ant@ucsd.edu

> >>I am interested in the Cushcraft R7 antenna. I have heard some good  
> >  
> >I, too, am interested in this antenna. I saw in QST that Butternut has a  
> >similar, 9-band antenna. I called AES and it isn't in vendor's hands  
> >yet. A call to Butternut indicates that it's within a couple weeks  
> >(that's what they all say) of being shipped. However, the fellow  
> >made it worth the wait, as he indicated that the antenna itself would  
> >probably run around \$215 and the counterpoise kit about 50 bucks  
> >more. They're happy to send out literature, for which I'm watching  
> >the mail.

You'll find their literature very informing. No doubt they send you some documentation on some "dirty little secrets". I read them and found them very interesting.

> > ...  
> >From what I can tell, Cushcraft has a ways to go to justify their being  
> >\$150-200 higher than some of the semi-comparable antennas.

> The R7 is an end fed half wave it needs no raidals. It has a much lower  
> angle of radiation than a quarter wavelength vertical and much more  
> reliable than a 5/8 wave vertical. Make sure the Butternut is an  
> end fed half wave if you are interested in DX it does make a difference.

Just a tidbit from the comments from Butternut about "some so called half wave antennas", although they don't mention any names (due to liability issues) it is obvious who they are talking about.

Cushcraft claims that the R7 is end fed halfwave antenna. This 1/2 wave antenna is only 22.5', hustler's simple 1/4 4 band trap vertical is 21.5'. 40 meters on each antenna is using the full length of the antenna. How can the R7, being only 1' taller then the 4 btv, be a 1/2 wave antenna?? It's electrical dimensions just don't measure up.

It is true that the R5, R7, and other so-called end-fed 1/2 wave antennas present a very good (1:1-1:1.5) swr match to the fedline. But, having a good swr does not always mean that you are radiating efficiently. Remember the picture in QST where the guy has a stake nailed into a tree? He had a great SWR, but not much radiated power.

I would encourage everyone who is considering buying an end-fed 1/2 wave antenna to send for the FREE antenna documentation from Butternut. It's very enlightening, amusing, informative, and includes many references to to ARRL Antenna Handbook.

I would also be very interested in hearing from more people that may have done side by side testing with the R5/R7 and other antennas. I don't know if I fully agree with what Butternut is saying, but it does seem to make a lot of sense.

73,  
km6wt,      mont@ibmmail.com

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Date: 6 Oct 93 00:03:52 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Cushcraft R7: Want Comments  
To: ham-ant@ucsd.edu

I'm posting the following for Eric:  
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I am currently unable to post to the newsgroups. I can at present only read and reply by E-Mail. Could you please post this for me? I think it will be of interest to all who have been following this thread.

Thanks, Eric Gustafson    N7CL

I have been following this thread with interest. When I saw the synopsis of Butternut's comments posted, I couldn't resist doing a bit of modeling to see just how dirty the "little secrets" are.

I modeled 4 antennas to compare with one another. The first is a full sized 1/4 wave 1.5 inch diameter aluminum tube driven against a single ground rod (no radials). The second is a full sized 1/4 radiator as above but with its base elevated 10 feet above ground and fed against 4 full sized 1/4 wave (actually a bit longer than 1/4 wave) horizontal radials made from #14 wire. The third is a full sized 1/2 wave center fed vertical dipole (again 1.5 inch aluminum tubing) with the bottom end 10 feet above ground. The fourth antenna is a 21.5 foot length of 1.5 inch dia aluminum tubing fed in the center and inductively loaded to resonance in the 40 meter band. All antennas were modeled against what ELNEC calls "good" ground (conductivity =  $5e-3$  s/m, dielectric constant = 13). The results were quite interesting.

Antenna # (above order)	Gain (dBi) (inc losses)	Takeoff Angle (deg up from horizon)
1	-1.77	26

	2	-0.281	22
	3	+0.016	16
	4	-0.222	24
*	5	-0.33	16

\* Antenna #5 is antenna #4 (the physically short electrical 1/2 wave) mounted with the bottom of the antenna structure 35 feet above ground.

73, Eric

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Eric Gustafson  N7CL          | The mountains are high and the Emperor
2018 S. Avenida Planeta      | is far away.
Tucson, AZ 85710             |
INTERNET: modular!eric@arizona.edu | You can't work 'em if you can't hear 'em.
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Date: 4 Oct 1993 16:55:08 GMT
From: swrinde!elroy.jpl.nasa.gov!usc!sol.ctr.columbia.edu!usenet.ucs.indiana.edu!
master.cs.rose-hulman.edu!news@network.ucsd.edu
Subject: G5RV info swr info
To: ham-ant@ucsd.edu

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> Frequency           Lowest SWR
>
> 51.23 Mhz           1.4
> 40.07 "              1.1
> 35.75                2.9
> 28.74                1.5
> 17.57                2.3
> 13.45                1.3
> 6.66                2.3
>
>
> Just asking. This is not using an antenna tuner.

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I find this VERY interesting. Tnx fer posting it. Incidentally, I've yet to work a station using a G5RV who does not use a tuner.



From: ncrwg2.ncr.com!ncrhub2!tdbunews!nsc32!wps@uunet.uu.net  
Subject: Kill the Rubber Duck!  
To: ham-ant@ucsd.edu

>I have a RS HTX202, and several people have suggested that I get rid  
>of the rubber duck, and get a "real" antenna. One suggested (jokingly,  
>I think) that even a piece of coat hangar would be better, which brings  
>me to my questions:

It is not a joke about the coat hanger. After I received my ticket, I also got a copy of NEW HAM COMPANION from the ARRL as an intro. The issue that I received explained how to build a ground plane with wire about the diameter of a coat hanger.

I built one for my 2m and I do far better than the standard rubber duck that came with my FT-530. When I attended the HAM convention last month in California, Yaesu took back my rubber duck and gave me much longer on with improved performance.

It is all in the antenna. My next project is to build a J-pole from copper tubing. The plans are (I believe) in an early copy of QST.

73's  
Bill KD6UQB

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Date: 4 Oct 1993 16:47:52 GMT  
From: swrinde!elroy.jpl.nasa.gov!usc!howland.reston.ans.net!vixen.cso.uiuc.edu!usenet.ucs.indiana.edu!master.cs.rose-hulman.edu!news@network.ucsd.edu  
Subject: Parallel Dipole  
To: ham-ant@ucsd.edu

In article <116210005@hplvec.LVLD.HP.COM> scott@hplvec.LVLD.HP.COM (Scott Turner) writes:

> Thanks to those who responded to my request for information about  
> trimming a parallel dipole to resonance. I've started the process  
> working from 80/75 up. It is an interesting, slow and painfull  
> process :-)

>

> Thanks again for the responses.

>

> Scott Turner N0VRF scott@hplvec.LVLD.HP.COM

> HP VXI Systems Division

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I've always been afraid to do this. Now I have a MFJ SWR analyzer and am itching to try it again. Let me know about the interactions as you add

more dipoles.

tnx es 73 de Jack, K9CUN

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Date: Tue, 5 Oct 1993 17:57:24 GMT  
From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!torn!  
nott!cunews!freenet.carleton.ca!Freenet.carleton.ca!aj467@network.ucsd.edu  
Subject: Problem with Diamond SG7900  
To: ham-ant@ucsd.edu

In a previous article, murrayp@lafcol.lafayette.edu (Pete Murray N3IXY)) says

>the Diamond SG7900. The performance is absolutely  
>outstanding, up until recently. I've started to notice that transmit  
>and receive have really fallen off on the UHF side of the antenna, for  
>no obvious reason.

I have had the privelege of the use of a SG7900 for the last few months.  
( since about June ) The only problems I've encountered are in the female  
sie of the PL/SO connection. Spreading the contacts and therby tightening  
the connection has been the cure ... incidentally this antenna has been  
blown off a car ( the initial mag-mount was too small ) and the end of the  
antenna is missing ( the static ball ) so it hasn't led a sheltered life,  
in fact it was run over while connected to the radio.

73 ... Bill

--  
Bill VE3NJW, VE3NJW@VE3KYT.#EON.ON.CAN

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Date: Mon, 4 Oct 1993 19:22:09 GMT  
From: netcon!hatch!netcomsv!pegasus!sherlock!rhair@locus.ucla.edu  
Subject: Tuning a multi-element Yagi  
To: ham-ant@ucsd.edu

Howdy,

- Does anyone have info on setting up/tuning a Hygain tri-bander?  
(i.e. element separation/lengths...)

I recently had the pleasure of acquiring a used Hygain tri-bander. It's  
the one with a 24' boom, 2 reflectors, and 3 directors (10,15,20). Despite  
the rusty bolts, I managed to assemble it in the driveway. Had < 2.0 swr  
on all 3 bands (at 4' off the ground!!). Really nice! (Too bad the audio



oscillator in my Tempo-One died before I could make any test contacts...  
again! :< ??) What should I verify operationally before I put it up?

Richard Hair, KD6UMA

Develop small business manufacturing for the nations greatest  
resource: The under- and unemployeed... How many product ideas  
wither and fade untested because it just costs to D\*\*N much in  
time and money to try them out?!

Standard Disclaimer Proclaimed...

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End of Ham-Ant Digest V93 #69

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